WHAT IS CLAIMED IS:

1. A terrestrially deployed flexible antenna, comprising:

a flexible dielectric material having a first surface and a second surface;

a flexible conductive ground plane secured to the first surface of the dielectric material;

at least one flexible, planar conductive element secured to the second surface of the flexible dielectric material, wherein the flexible dielectric material is bonded to form a collapsible enclosed volume with the ground plane forming an inner surface of the enclosed volume;

a propellant disposed within the enclosed volume, wherein the propellant releases a predetermined volume of gas when ignited; and

an igniter configured to ignite the propellant to release the predetermined volume of gas, to thereby temporarily expand the enclosed volume to a predetermined shape such that the ground plane, the dielectric material, and the at least one conductive element cooperate to form a resonant antenna circuit.

2. The flexible antenna of claim 1, wherein the propellant is sodium azide.

3. The flexible antenna of claim 1, wherein the propellant is one of nitroguanidine, tri-amino guanidine nitrate, guanidinium azotetrazolate, and 5-amino-tetrazole.

4. The flexible antenna of claim 1, wherein the predetermined shape is substantially conical.

5. The flexible antenna of claim 4, wherein the at least one conductive element is arranged to form a conical helix antenna.

6. The flexible antenna of claim 1, wherein the predetermined shape includes

a frustoconical shape defining an outer surface of the antenna, wherein the second surface of the flexible dielectric material is a portion of the outer surface, and

a substantially concentric conical shape disposed within the frustoconical shape and defining an inner surface of the antenna, wherein the first surface of the flexible dielectric material is a portion of the inner surface.

7. The flexible antenna of claim 1, wherein the predetermined shape is substantially cylindrical.

8. The flexible antenna of claim 1, wherein the predetermined shape includes a substantially prismatic shape having an inner surface, wherein the first surface of the flexible dielectric material is a portion of the inner surface of the substantially prismatic shape; and further wherein the second surface of the flexible dielectric material extends between non-adjacent inner vertices of the substantially prismatic shape.

9. A remote communications device, comprising:

a transceiver; and

an expandable, terrestrially-based antenna operationally connected to the transceiver,

wherein the antenna includes

a sheet of flexible dielectric material having a first side and a second side,

a flexible conductive ground plane secured to the first side of the flexible dielectric material,

at least one flexible, planar conductive element secured to the second side of the flexible dielectric material, wherein the flexible dielectric material is

shaped and bonded to form a collapsible enclosed volume with the ground plane forming an inner surface of the enclosed volume,

a propellant enclosed within the enclosed volume, the propellant configured to release a gas when ignited, and

an igniter configured to ignite the propellant and temporarily expand the enclosed volume to a predetermined shape such that the ground plane, the dielectric material, and the at least one conductive element cooperate to form a resonant electrical circuit.

10. The remote communications device of claim 8, wherein the transceiver and expandable antenna are waterproof.

11. The remote communications device of claim 9, further comprising a waterproof electrical connection that connects the transceiver and the expandable antenna, and wherein the transceiver and expandable antenna are configured to operate separately such that the transceiver is operable in a submerged state and the expandable antenna is operable in a non-submerged state.

12. The remote communications device of claim 9, wherein the transceiver is an electronic warfare apparatus.

13. The remote communications device of claim 9, wherein the sheet of flexible dielectric material is one of TEFLON and KAPTON.

14. The remote communications device of claim 9, wherein the expandable antenna is camouflaged to reduce visibility of the antenna in an environment in which the antenna is to be deployed.

15. A method of establishing electronic communication in an electronic warfare environment, comprising:

connecting an electronic communications apparatus to a temporarily expandable terrestrial antenna, the antenna including a substantially enclosed volume with one or more antenna elements secured thereon and a propellant disposed therein, the propellant configured to release a gas when ignited;

igniting the propellant and thereby releasing gas in the substantially enclosed volume, wherein the substantially enclosed volume is temporarily expanded to assume a predetermined shape, wherein the antenna elements are connected to the electronic communications apparatus.

16. The method of claim 15, further comprising:

forming the temporarily expandable antenna from a flexible, planar dielectric material attached to a conductive ground plane, wherein the one or more antenna elements are secured to the dielectric material.

17. The method of claim 15, further comprising:

determining an environment in which the expandable antenna is to be deployed; and

camouflaging the expandable antenna to reduce noticability of the expandable antenna within the environment.

18. The method of claim 15, wherein the predetermined shape is one of cylindrical, conical, and parabolic.